From: Johanna Thomas [mailto:JThomas@environmentaldefense.org]
Sent: Tuesday, November 08, 2005 1:59 PM
To: Johanna Thomas
Subject: MLPAComments: Environmental Defense Oceans Update

Dear Friends:

Attached is a recent opinion editorial by Environmental Defense marine ecologist Rod Fujita and chief scientist Bill Chameides that we thought you might like to read. In this article, our scientists explain global warming's effect on ocean processes and what we as ocean stewards can do to lessen the impacts of climate change on marine resources.

Sincerely,

Johanna Thomas

Oceans Program Deputy Director
Environmental Defense
Oakland, CA
(510) 658-8008

P.S. We would like to keep your apprised of Environmental Defense-Oceans Program activities in the Pacific region by sending quarterly emails, and hope you will enjoy receiving these brief updates. If you'd like to be removed from this email list, please contact Jenny Perich at jperich@ed.org and write "Please Remove" in the subject line.

Monday, October 10, 2005

Rolling loaded dice on climate change

By Bill Chameides and Rod Fujita

This spring and summer, the ocean off San Francisco behaved quite oddly. Twenty-seven miles off the Golden Gate lie the Farallon Islands, famous for huge numbers of seabirds and rich feeding grounds.

This summer, the prodigious productivity of many of these seabirds declined. Cassin's auklets were hit especially hard — only about 10 percent bred successfully, the lowest level recorded in 35 years of monitoring. Juvenile rockfish counts were the lowest they've been off California in more than 20 years. Most alarming, small crustaceans such as krill — the base of the ocean's food web — suffered steep declines.

Scientists are trying to learn whether 2005 is an anomaly, or part of a long-term trend such as climate change.
Natural variability in weather can often play a role in sea life declines, and San Francisco's weather is famously variable, veering wildly from beautiful sunny days to bone-chilling fog. The climate system of the western Pacific Ocean itself is also naturally variable, cycling on several different time scales, from tens of thousands of years between ice ages to just a few years between El Niños.

Scientists are certain, however, that climate change is a scientific reality. Emissions of carbon dioxide from power plants, cars and factories are trapping heat in our atmosphere and causing our planet to slowly heat up.

And a warmer Earth, scientists predict, will cause major changes in our weather. In the future, weather will still be a roll of the dice, difficult to predict from one year to the next — but the dice will be loaded, with earlier springs, extreme weather and other unusual events far more likely than before.

In the wake of two seminal papers published in "Science" this summer, scientists no longer doubt that the ocean is soaking up a large fraction of heat trapped by global warming pollutants. Because of its enormous size, the ocean has acted as a flywheel on the climate system, slowing down the warming of the atmosphere and delaying the full impact of climate change.

But there are signs that the ocean is beginning to suffer adverse impacts from the accumulation of heat. Most scientists now agree that many coral reefs that turned white and died during the 1980s and 1990s were victims, at least in part, of global warming. In addition, salt marshes are being flooded by rising sea levels as glaciers melt and the ocean expands in response to higher temperatures. Recent studies also suggest that it may become harder for ocean animals to make shells and reefs, as higher carbon dioxide levels make the ocean more acidic.

Since we are gambling with the Earth's weather, we need to hedge our bets by moving quickly to cap global warming pollutant emissions in the United States. We applaud the California Legislature and the administrations of both Gray Davis and Arnold Schwarzenegger for taking the lead in this effort, especially given the strenuous opposition of the automobile and oil industries.

One way to hedge our bets is to protect our marine areas so fish and other living creatures have a fighting chance to survive the inevitable changes wrought by climate change.

This can be accomplished in part by creating marine protected areas to allow ocean areas to adapt to changing climate conditions and to focus efforts to reduce pollution and other threats. Schwarzenegger and the state Legislature have authorized the creation of a new, high-powered Ocean Protection Council with a broad mandate to move aggressively to protect the ocean off California's magnificent coastline.

It's a good start, and we are encouraged. But it will also take citizen vigilance and participation to assure that these and other recent initiatives end up making a real difference to the creatures that live in the sea.

Bill Chameides *is chief scientist at Environmental Defense's headquarters in New York.*

Rod Fujita *is a marine ecologist in Environmental Defense's Oakland office and author of "Heal the Ocean."*